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must affect the next contiguous one, and so on *ad infinitum*, and change the result.

So, taking his illustration of the action of sand grains, not one of them is bound, nor are they likely ever, in an eternity of shaking, to take again the identical position that they have once assumed, because there is not supposed or suggested any cause guiding them to it. There is an infinite number of other positions equally possible and likely,—an infinite number can never be exhausted. And, further, sand grains or atoms have not, like the dice, one fixed plane on which they must rest: the number of planes which they may occupy is unlimited.

In his dice illustration he limited the repetition to the one circumstance of numbers uppermost; whereas, had he taken into account lateral position and distance apart,—all of which, and much more, he must do before he is fully prepared for the rehabilitation of Julius Cæsar in his ancient glory,—his reasoning would not apply, even to the dice.

The former exact position or motion of an atom can have no influence to cause it to be repeated, hence all—conceivable or inconceivable—combinations must be equally possible, equally probable, equally certain; where then is the suggested improbability that the molecules constituting the author's body "once filled a bung-hole," or, indeed, not once only, but an infinite number of times? Some atoms had to fill it, why not those? This point needs elucidation, or we must hold that, according to his "iron logic of modern dynamics,"—which he seems for the moment to have lost

sight of,—these very atoms must take their turn at the bung-hole from time to time, as well as the rest.

The great Solomon, the wisest man that ever lived or ever shall live, erred for once in his oft-quoted doctrine, "There is nothing new under the sun," inasmuch as he should have said, "There is nothing *old* under the sun;" i.e., no combination of things, circumstances, or conditions which ever—precisely—occurred before, or which is absolutely identical with those at any preceding epoch. "The thing that hath been is [not exactly] that which shall be."

Hence it plainly appears that the recurrence of the same entire range of conditions, which, to the minutest particular and throughout the universe, is requisite to the reproduction of former structures and actions, is as certain never to take place, as is the same epoch, the identical moment of time, certain never to return.

W. H. PRATT.

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